

### **REMARKS**

The amendments after the final Office action filed by Applicant on July 3, 2003 were not entered by the Examiner. Applicant is presenting amendments to the application in this paper. Applicant respectfully requests the entry of such amendments.

In view of the amendments and the following remarks, favorable reconsideration of the application is respectfully requested.

Applicant noticed that hitherto in the application the Examiner and Applicant have been consistently referring reference European Patent Application Publication No. 0 441 128 A1 (hereinafter EP '128) as "United Kingdom Published Patent Application No. 0441128, GB '128." Applicant identified and submitted a copy of EP '128 in the invention disclosure filed on December 13, 2001. To the extent the Examiner agrees in the telephone interview with Applicant's counsel on June 9, 2003, Applicant hereinafter takes liberty to use EP '128 to identify this reference in this and future papers.

Applicant respectfully submits that the amendments made in the claims, especially the change of  $\text{Nd}_2\text{O}_3$  content from "at least 5%" to --5-10%-- in claims 1 and 7, do not involve introduction of new matter into the application. The Examiner's attention is directed to examples 10, 11, 13, 14 and 18-24 in the TABLE of pages 5-6 of the specification, which all contain  $\text{Nd}_2\text{O}_3$  in 10%. Indeed all examples supporting the present invention (except comparative example 8) contains  $\text{Nd}_2\text{O}_3$  equal to or lower than 10%.

The following remarks/arguments are made in response to the final rejection by the Examiner dated May 6, 2003, which are still in place.

#### **1. Drawings**

Applicant notes with appreciation that the Examiner has approved the revised drawing as submitted by Applicant on February 5, 2003. Formal drawing of FIGURE 1 will be prepared and submitted pending allowance of this application.

#### **2. Claim Objections**

##### *I. Item 1 of the Detailed Action*

In this Item of the Detailed Action, the Examiner correctly pointed out that the unit of the thickness of the glass sheet in this claim should be "mm" instead of "nm." It has been corrected as appropriate above.

### 3. Rejections under 35 U.S.C. § 103

#### II. *Item 3 of the Detailed Action*

In this Item of the Detailed Action, the Examiner rejected all pending claims in the present application, namely, claims 1-4, 6, 7, 9 and 10 as being unpatentable over United States Patent No. 5,844,721 (Karpen) in view of European Patent Application Publication No. 0 441 128 (EP '128), further in view of Applicant's disclosure in the application.

#### II. *Item 5 of the Detailed Action*

The Examiner was not persuaded by Applicant's submission filed on February 6, 2003. In particular, in this Item of the Detailed Action, the Examiner compared the glass composition recited in claims 1 and 7 (previously amended prior to the amendments herein) of the present application and the broadest composition as disclosed in EP '128. Finding that the comparison "clearly demonstrates the overlap of the glass composition" of the present application, the Examiner went on to say that "[a]bsent an evidentiary showing as to the criticality of the claimed ranges of the glass components in the composition in obtaining unexpected results, it is within the skill of one in the art to optimize the amount of each component to use in the glass by routine experimentation."

As indicated in the amendments presented above, Applicant has amended claims 1 and 7 by further limiting the  $\text{Nd}_2\text{O}_3$  amount in the glass compositions, viz., Applicant has changed the amount of  $\text{Nd}_2\text{O}_3$  from "at least 5%" to --5-10%--.

Applicant respectfully submits that the outstanding claims, as amended herein, are not obvious over Karpen, further in view of EP '128 and the disclosure of the present application.

In support of Applicant's view, a Declaration Under 37 C.F.R. § 1.132 by the inventor, Dr. Ronald L. Stewart, was produced and filed on July 3, 2003. The Examiner has entered the Declaration into the application according to an advisory action of July 15, 2003.

Applicant offer the following observations addition to those in the Declaration Under 37 C.F.R. § 1.132.

First, the glass composition recited in claims 1 and 7, as amended, are substantially different from what is disclosed in EP '128. A side by side comparison of the glass composition and the disclosure of EP '128 is provided in CHART I below. Data of the composition as disclosed in EP '128 are available from Table 1, page 4 of EP '128. Data in shaded boxes of CHART I indicate substantial difference between the glass composition of the present application and the EP '128 disclosure.

(i) As Applicant pointed out in previous submissions, the K<sub>2</sub>O amount of the glass composition of the present application are quite different than what is disclosed in EP '128. EP '128 prefers not to have K<sub>2</sub>O.

(ii) As is clear from CHART I, the Nd<sub>2</sub>O<sub>3</sub> level of the glass composition of the present application is substantially different from the EP '128 disclosure. The only overlapping point in Nd<sub>2</sub>O<sub>3</sub> is 10% between the present application and the broadest compositional range as disclosed in EP '128. Indeed, the preferred Nd<sub>2</sub>O<sub>3</sub> amount (20-30%) in the EP '128 disclosure are far from the present invention glass composition. One of skill in the art would not and could not derive the suitable Nd<sub>2</sub>O<sub>3</sub> range of 5-10% of the present application from the 10-30% range as disclosed in EP '128. Indeed, in terms of Nd<sub>2</sub>O<sub>3</sub>, EP '128 teaches away from the present application, if anything.

CHART I

	The present invention (%)	EP '128		
		Broadest	Preferred	Most Preferred
SiO <sub>2</sub>	55-70	50-60	45-60	50-55
Al <sub>2</sub> O <sub>3</sub>	0.5-4.5	0-7	0	0
B <sub>2</sub> O <sub>3</sub>	6-14	5-15	5-10	6-8
ZnO	3-10	0.1-10	1-7	2-5
Na <sub>2</sub> O	5-11	3-8	10-15	11-13
K <sub>2</sub> O	2-9	0-3	0	0
Na <sub>2</sub> O+K <sub>2</sub> O	7-20			
Nd <sub>2</sub> O <sub>3</sub>	5-10	10-30	20-30	22-26
As <sub>2</sub> O <sub>3</sub> /Sb <sub>2</sub> O <sub>3</sub>		0-1	0-0.5	0.2-0.4
Li <sub>2</sub> O		0-3	0	0
PbO		0-15	0	0
MgO		0-3	0	0
CaO		0-3	0	0
SrO		0-3	0	0
BaO		0-3	0	0
Σ(V <sub>2</sub> O <sub>5</sub> +Cr <sub>2</sub> O <sub>3</sub> +Mn <sub>2</sub> O <sub>3</sub> +Fe <sub>2</sub> O <sub>3</sub> +CoO+NiO+CuO)		0-7	0	0
TiO <sub>2</sub>		0-5	0	0
Pr <sub>6</sub> O <sub>11</sub>		0-1	0	0

(iii) As Applicant pointed out in previous submissions, all 24 examples of EP '128 fall outside of glass composition of the present application.

Second, the glass composition of the present invention has unexpected technical advantages.

(a) The glass composition of the present application is suitable for producing thin sheet glass having a thickness of less than 0.5 mm, via, for example, the slot-draw process. EP '128 and Karpen do not contain disclosure as to whether the glasses of EP '128 are fit for slot-draw process. Indeed, neither of these two references suggests how to modify the glass compositions as taught in EP '128 to render them suitable for slot-draw production processes. It is the Applicant's belief that many glass compositions in the range as disclosed in EP '128 are not suitable for slot draw process.

(b) The  $\text{Nd}_2\text{O}_3$  in the glass of the present application tends less likely to devitrify during the glass production process. The Examiner's attention is directed to comparative Example 8 of the present application, page 5. This example, featuring 11%  $\text{Nd}_2\text{O}_3$ , falls within the broadest glass compositional range as disclosed in EP '128 but outside of the glass composition as recited in claims 1 and 7 of the present application, as amended herein. Paragraph [0024], page 8 of the present application discloses that this glass devitrifies during the production process. Therefore, Applicant has reason to believe that many glasses falling within the broadest compositional range as taught in EP '128 are not suitable for slot draw process without devitrification of  $\text{Nd}_2\text{O}_3$ .

The present application claims reflective mirror and glass sheet containing  $\text{Nd}_2\text{O}_3$  doped glass having the above compositions. Thus, the technical advantages of the glass composition constitute technical advantages of the reflecting mirror and glass sheet as claimed.

Third, the Examiner is requested not to read EP '128 with hindsight after reading the disclosure of the present application. It may be arguably obvious to try the present application in view of the composition as taught in EP '128, but the present application glass composition range is not derivable through routine experimentation from the teachings of EP '128. EP '128 is primarily concerned with the chemical strengthenalibyt of the glass, but not the devitrification issue of  $\text{Nd}_2\text{O}_3$  and thin-sheet glass production. The Examiner's attention is again directed to the comparative examples 7 and 8 in the present application in the table of page 5, both falling outside of the glass composition range of the present application, yet within the broadest compositional range disclosed in EP '128. It is disclosed in paragraph [0024], page 4 of the present application that they devitrified during the production process. These two examples clearly indicate that the tailoring of the glass composition, including the ranges of  $\text{Nd}_2\text{O}_3$ ,  $\text{K}_2\text{O}$ ,  $\text{Na}_2\text{O}$ , inter alia, is important for the present invention to achieve the

objectives, and are not obtainable by mere routine experimentation in light of the teaching of EP '128.

#### 4. Conclusion

Based upon the above amendments, remarks, and papers of record, Applicant believes the pending claims of the above-captioned application are in allowable form and patentable over the prior art of record. Applicant respectfully requests reconsideration of the pending claims 1-4, 6, 7, 9 and 10 and a prompt Notice of Allowance thereon.


Applicant believes that no extension of time is necessary to make this Response timely. Should Applicant be in error, Applicant respectfully requests that the Office grant such time extension pursuant to 37 C.F.R. § 1.136(a) as necessary to make this Response timely, and hereby authorizes the Office to charge any necessary fee or surcharge with respect to said time extension to the deposit account of the undersigned firm of attorneys, Deposit Account 03-3325.

The undersigned attorney is granted limited recognition by the Office of Discipline and Enrollment of the USPTO to practice before the USPTO in capacity as an employee of Corning Incorporated. A copy of the document granting such limited recognition is submitted herewith. It is respectfully requested that this document be entered into the file as well.

Please direct any questions or comments to the undersigned at (607) 248-1253.

Respectfully submitted,

CORNING INCORPORATED

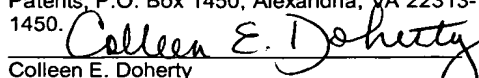
  
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I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date indicated above with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

  
Colleen E. Doherty